FIG. 1

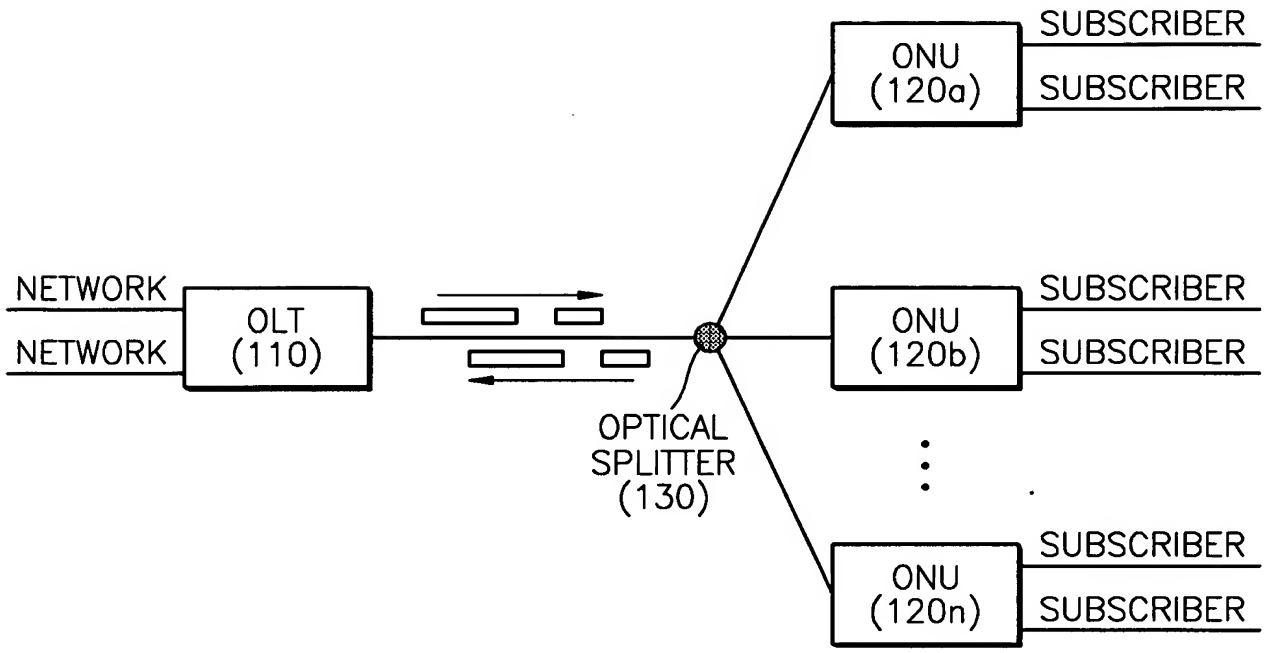
NETWORK
NETWORK
OLT
(110)
OPTICAL
SPLITTER
(130)
ONU
(120a)
ONU
(120b)
ONU
(120n)
SUBSCRIBER
SUBSCRIBER
SUBSCRIBER
SUBSCRIBER
SUBSCRIBER
SUBSCRIBER

FIG. 2A

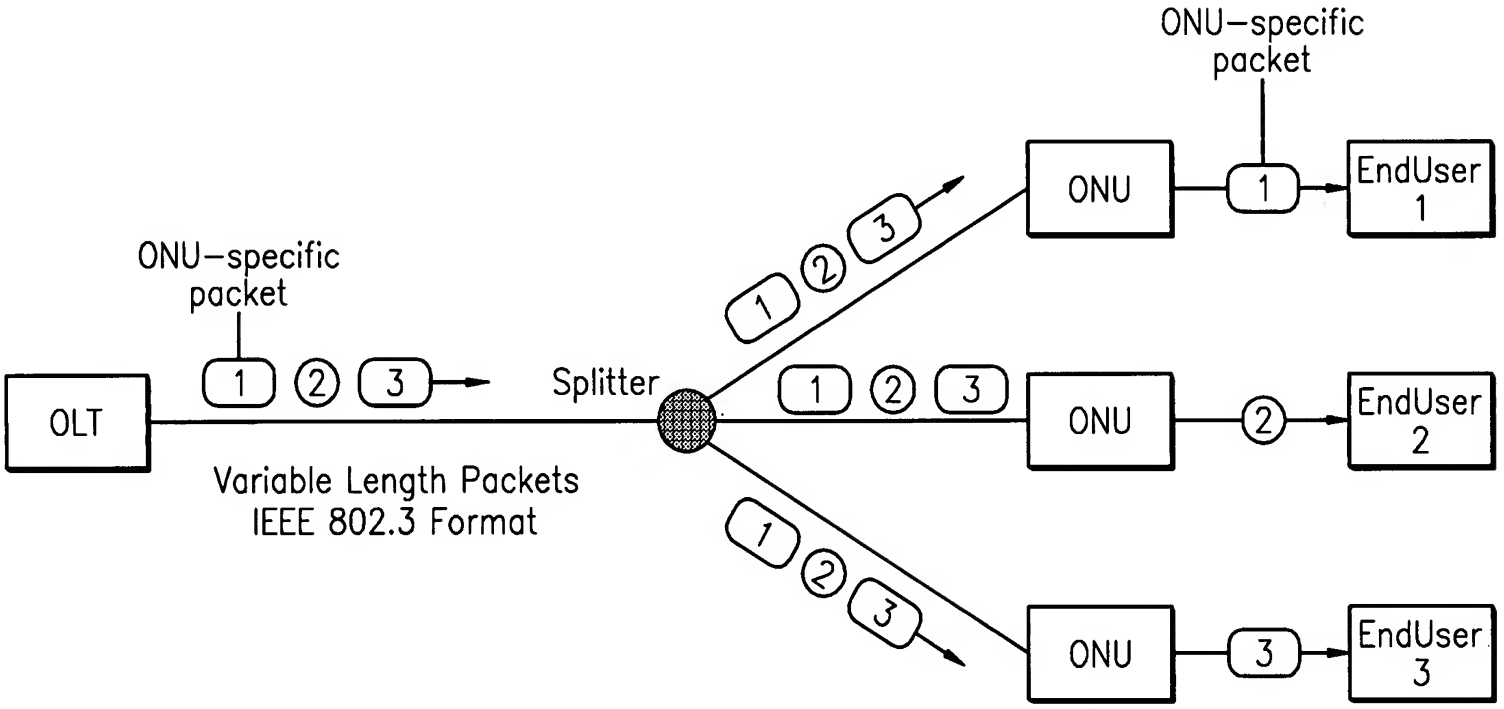
ONU–specific packet
ONU–specific packet
OLT
1
2
3
Splitter
Variable Length Packets
IEEE 802.3 Format
ONU
ONU
ONU
EndUser 1
EndUser 2
EndUser 3

FIG. 2B

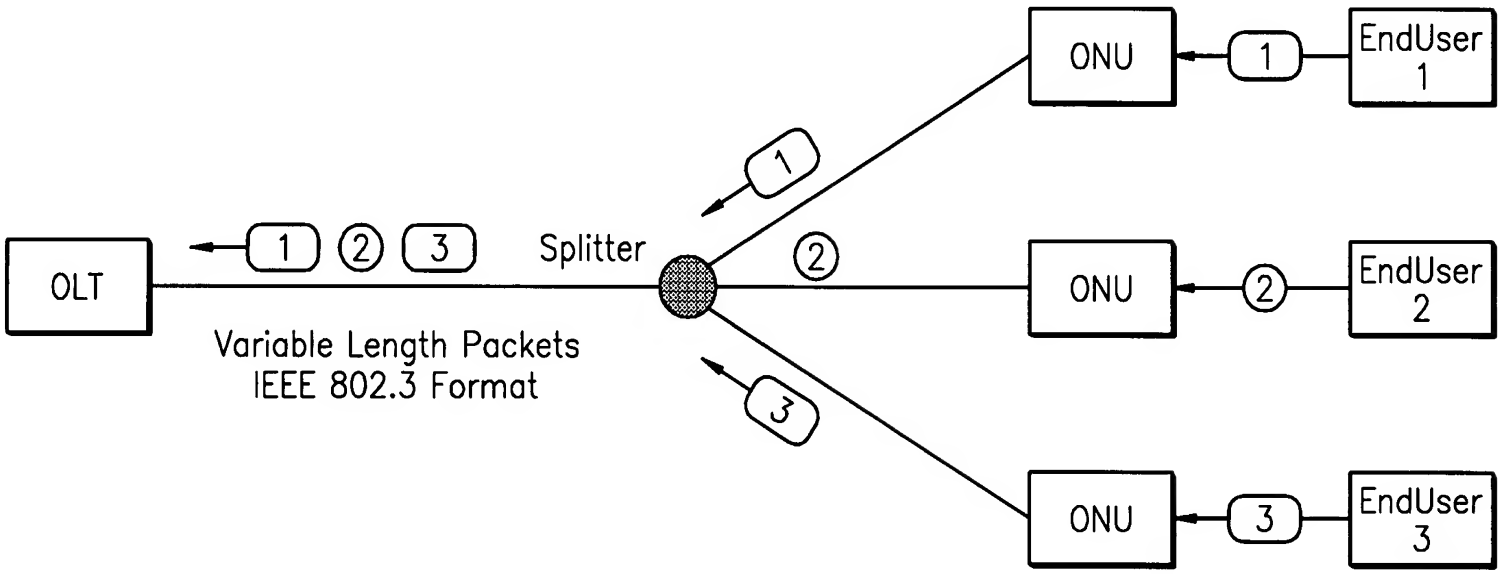
OLT
1
2
3
Splitter
Variable Length Packets
IEEE 802.3 Format
1
2
3
ONU
1
EndUser
1
ONU
2
EndUser
2
ONU
3
EndUser
3

FIG. 3

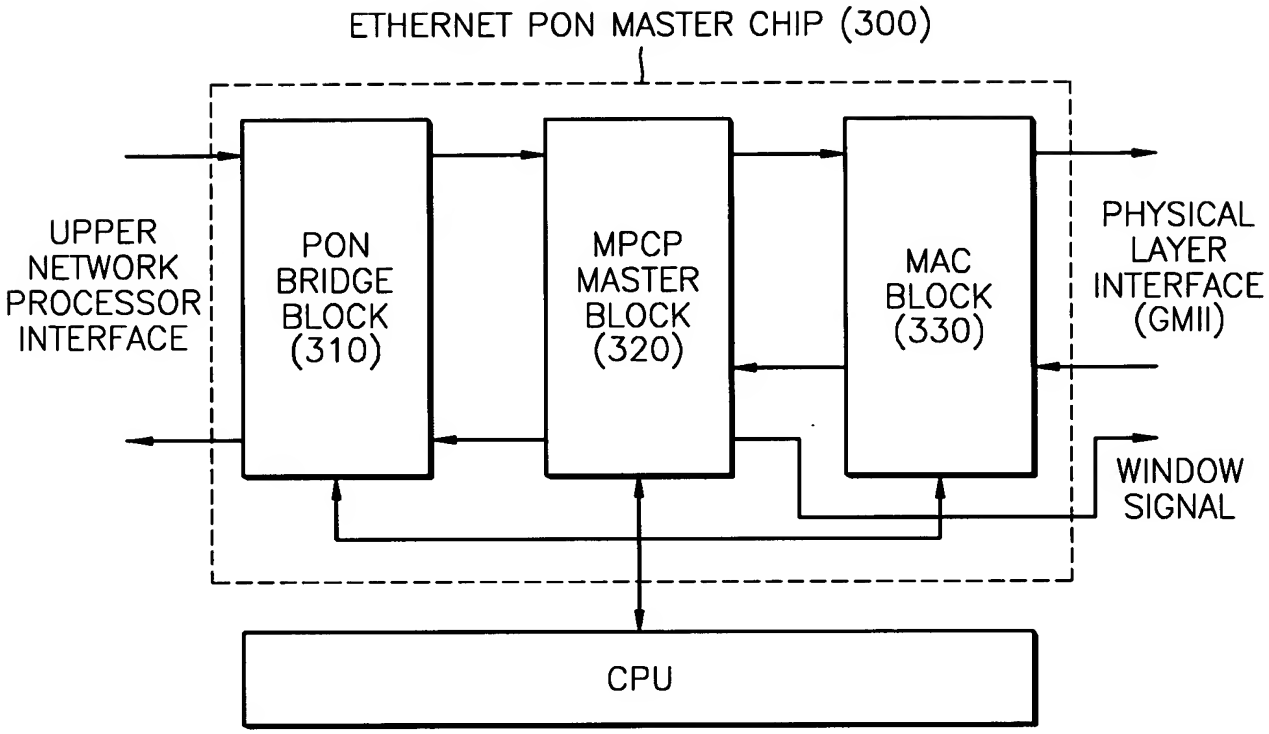
ETHERNET PON MASTER CHIP (300)
UPPER NETWORK PROCESSOR INTERFACE
PON BRIDGE BLOCK (310)
MPCP MASTER BLOCK (320)
MAC BLOCK (330)
PHYSICAL LAYER INTERFACE (GMII)
WINDOW SIGNAL
CPU

FIG. 4

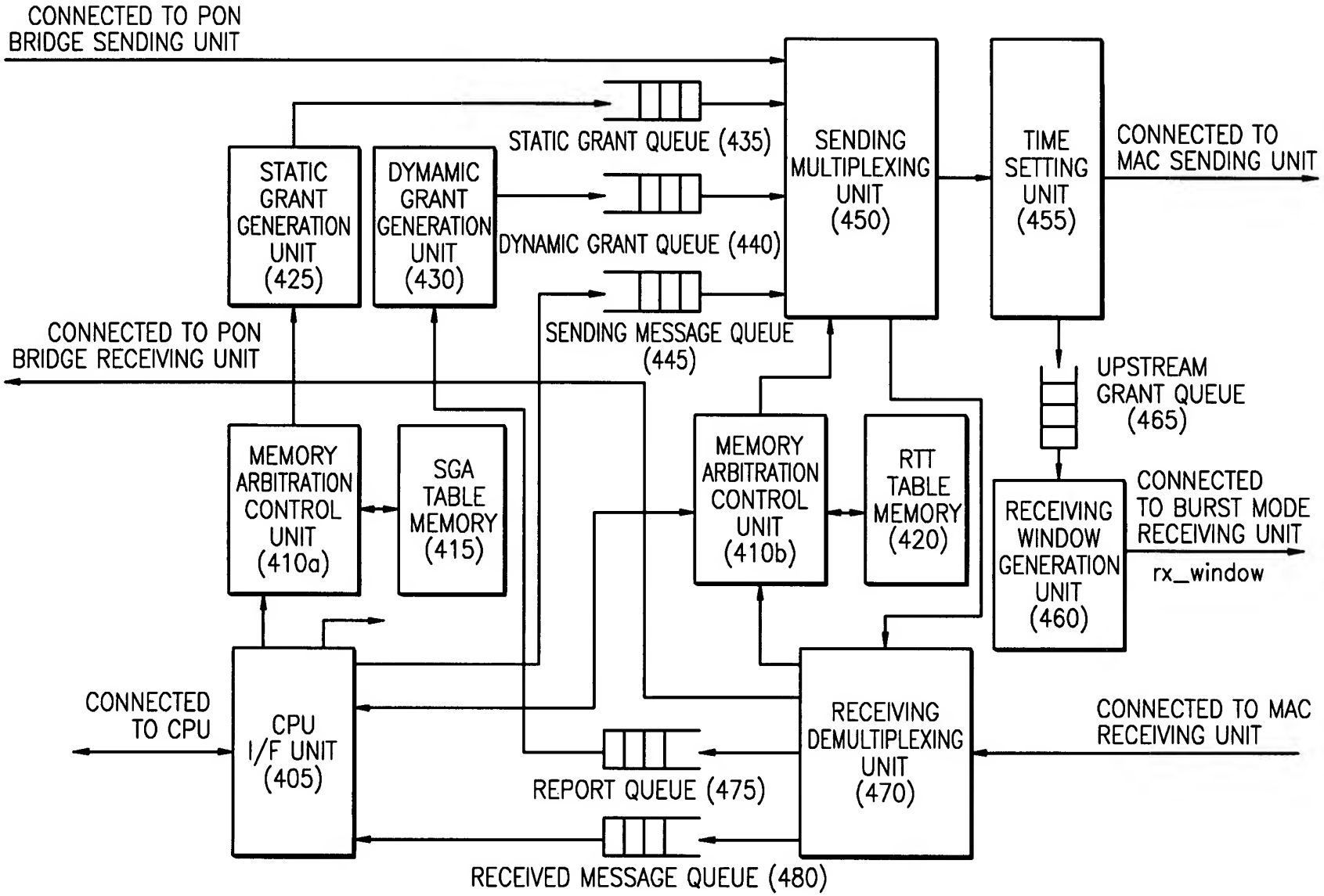
CONNECTED TO PON BRIDGE SENDING UNIT
STATIC GRANT QUEUE (435)
SENDING MULTIPLEXING UNIT (450)
TIME SETTING UNIT (455)
CONNECTED TO MAC SENDING UNIT
STATIC GRANT GENERATION UNIT (425)
DYMAMIC GRANT GENERATION UNIT (430)
DYNAMIC GRANT QUEUE (440)
SENDING MESSAGE QUEUE (445)
CONNECTED TO PON BRIDGE RECEIVING UNIT
UPSTREAM GRANT QUEUE (465)
MEMORY ARBITRATION CONTROL UNIT (410a)
SGA TABLE MEMORY (415)
MEMORY ARBITRATION CONTROL UNIT (410b)
RTT TABLE MEMORY (420)
RECEIVING WINDOW GENERATION UNIT (460)
CONNECTED TO BURST MODE RECEIVING UNIT
rx_window
CONNECTED TO CPU
CPU I/F UNIT (405)
RECEIVING DEMULTIPLEXING UNIT (470)
CONNECTED TO MAC RECEIVING UNIT
REPORT QUEUE (475)
RECEIVED MESSAGE QUEUE (480)

FIG. 5

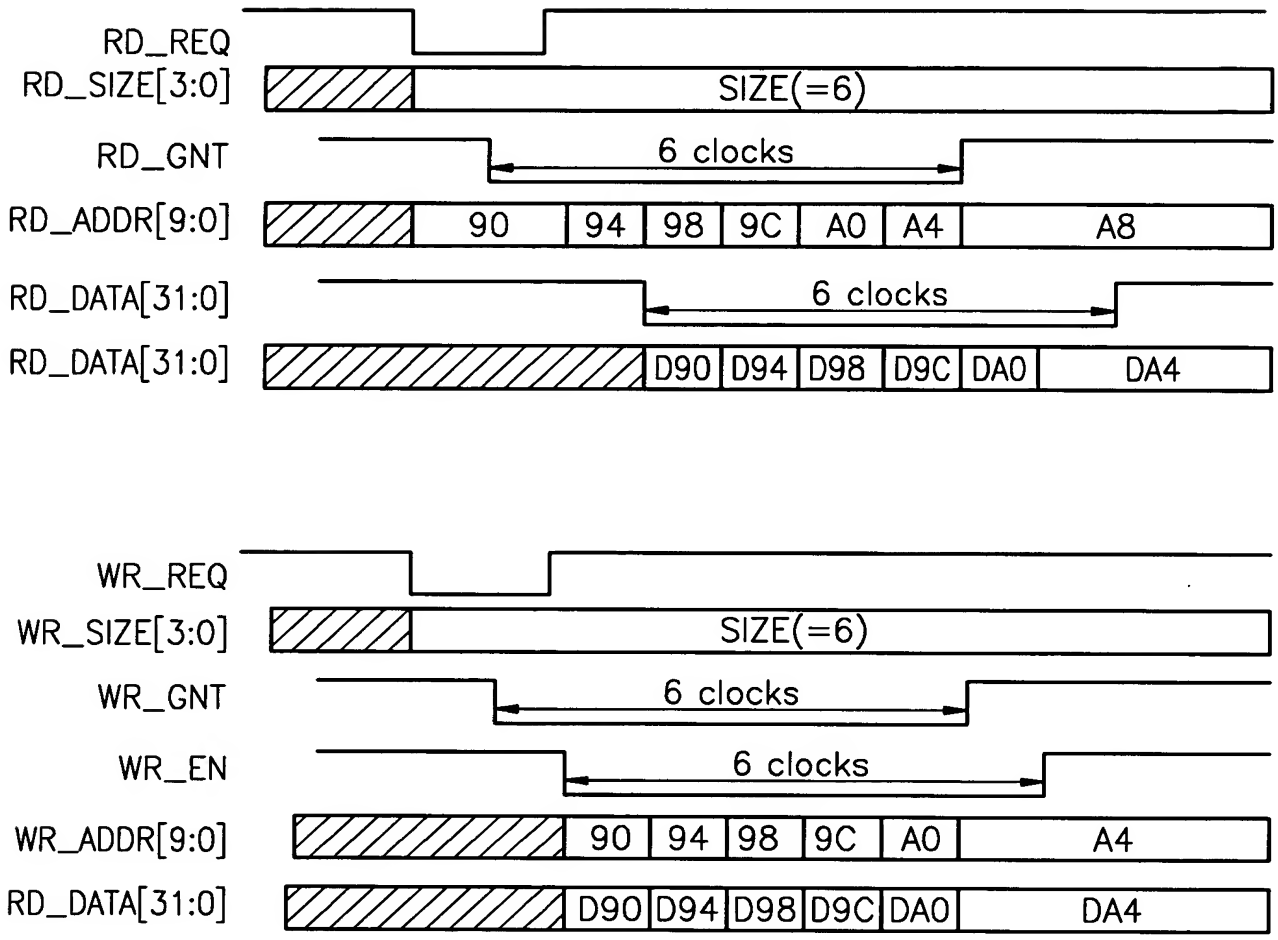
RD_REQ
RD_SIZE[3:0]
SIZE(=6)
RD_GNT
6 clocks
RD_ADDR[9:0]
90
94
98
9C
A0
A4
A8
RD_DATA[31:0]
6 clocks
RD_DATA[31:0]
D90
D94
D98
D9C
DA0
DA4
WR_REQ
WR_SIZE[3:0]
SIZE(=6)
WR_GNT
6 clocks
WR_EN
6 clocks
WR_ADDR[9:0]
90
94
98
9C
A0
A4
RD_DATA[31:0]
D90
D94
D98
D9C
DA0
DA4

FIG. 6

Action[3:0]	pointer [11:0]	LLID [15:0]
Duration[15:0]		MAC_ADDR[47:32]
MAC_ADDR[31:0]		
RESERVED		

FIG. 7

RESERVED	LLID [15:0]
RESERVED	MAC_ADDR[47:32]
MAC_ADDR[31:0]	
Queue0 report	Queue1 report
Queue2 report	Queue3 report
Queue4 report	Queue5 report
Queue6 report	Queue7 report
RESERVED	